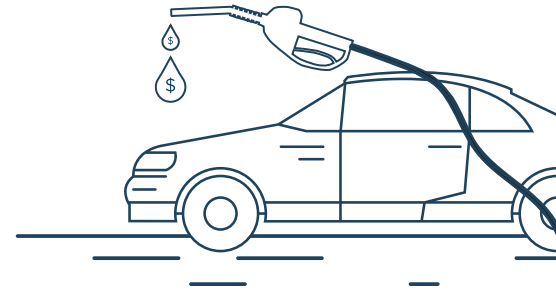


The NC FIRST Commission was created in March 2019 to evaluate North Carolina's transportation investment needs. Their job is to advise the Secretary of Transportation of new or better ways to ensure that critical financial resources are available in the future. As part of this process, we'll be looking for input from you, the people of North Carolina! This brief looks at the motor fuels tax and discusses reasons why the consumption of gasoline and diesel will decline along with revenues.

The NC Motor Fuels Tax

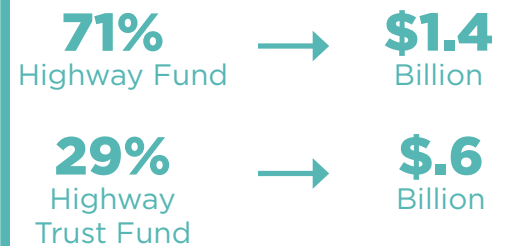


Overview

Enacted in 1921, state motor fuels tax revenue collections contributed more than \$2 billion dollars in FY 2019 to the N.C. Department of Transportation's (NCDOT) highway and multi-modal projects. Representing 54 percent of state transportation resources, changes in fuel economy, consumer mobility preferences and alternative fuel vehicles will erode these revenues.

Motor Fuels Tax Revenues

\$2 Billion



How does the gas tax work?

Often referred to as the "**gas tax**," the State charges a \$0.362 tax on each gallon of motor fuel (gasoline and diesel) purchased and an additional \$0.0025 per gallon inspection fee. Gas tax revenues are NCDOT's largest funding source and the law requires these revenues to be used only for transportation purposes.¹ Motor fuels revenues are deposited into two funds, with **71** percent of revenues deposited in the Highway Fund and **29** percent deposited in the Highway Trust Fund. Gas tax revenues support **65** percent of maintenance and operations in the Highway Fund and **39** percent of capital needs in the Highway Trust Fund.

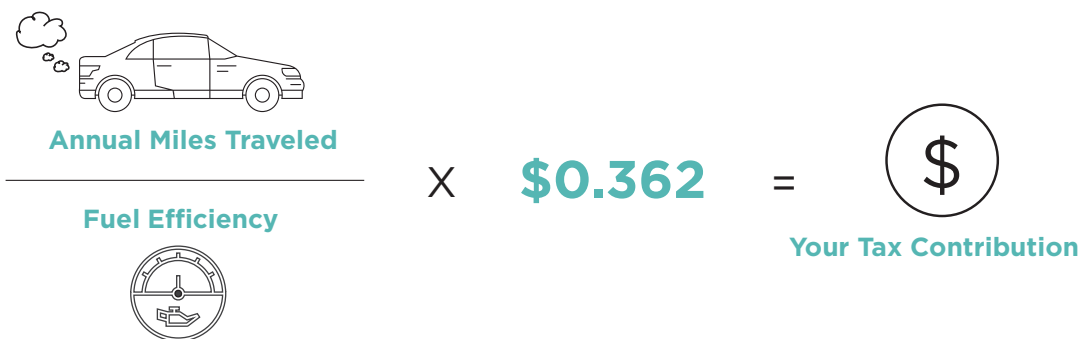
The taxation rate on motor fuels is updated annually based on changes in population and the Consumer Price Index for energy (CPI-E).² Implemented on Jan. 1, 2017, this updated formula has modestly increased the tax rate. These increases are necessary to offset expected future reductions in fuel consumption and pay for the increasing demands on the state's infrastructure.

¹ North Carolina General Statute 105-449.62

² North Carolina General Statute 105-449.80. The formula is calculated by adding to the existing rate the percentage change in the state's population (75% of formula) and the Consumer Price Index for energy (25% of formula).

How much do I pay in gas taxes?

The amount you pay in gas tax (which is included in the retail price paid at the pump) is dependent on your vehicle and your driving habits. Generally, newer vehicles have higher fuel economy while city driving and aggressive driving lower your vehicle's fuel economy. NCDOT estimates the average North Carolina driver currently travels **12,000** miles annually in a vehicle that consumes one gallon of motor fuel every 22 miles. Therefore, an average driver pays approximately **\$200** annually in gas tax, or **\$3.80** weekly.

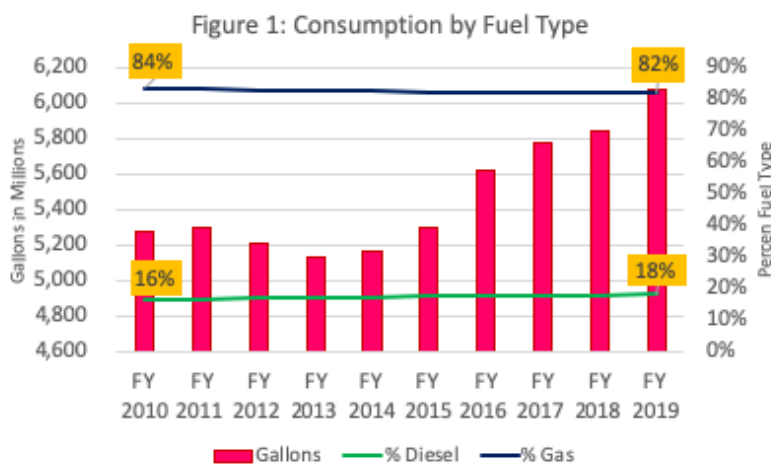


$$\frac{\text{Annual Miles Traveled}}{\text{Fuel Efficiency}} \times \$0.362 = \text{Your Tax Contribution}$$

Why are people concerned about the future of the gas tax?

In general, fuel consumption in North Carolina has typically gone up each year, which has meant more gas tax revenues to pay for needed infrastructure investments. However, larger shifts in driving patterns, vehicle fuel economy, and alternative fuel vehicles are threatening the long-term future of the gas tax.

A key factor in motor fuel consumption is the state's economic health. As shown in **Figure 1**,³ fuel consumption dropped during the Great Recession but has risen steadily since 2014. In FY 2019, 232 million additional gallons of fuel were sold than in FY 2018—enough to fill 325 Olympic-size swimming pools. While consumption of both gasoline and diesel has risen, diesel sales have increased more than gasoline sales in seven of the last 10 years. This trend indicates the movement of more goods by truck as the economy has grown, but also reflects some of the broader societal shifts that are already affecting personal gasoline consumption and which will erode future fuel tax revenues. Moderating sales of motor fuel are not unique to North Carolina and can be seen around the country (See **Figure 2** on next page).

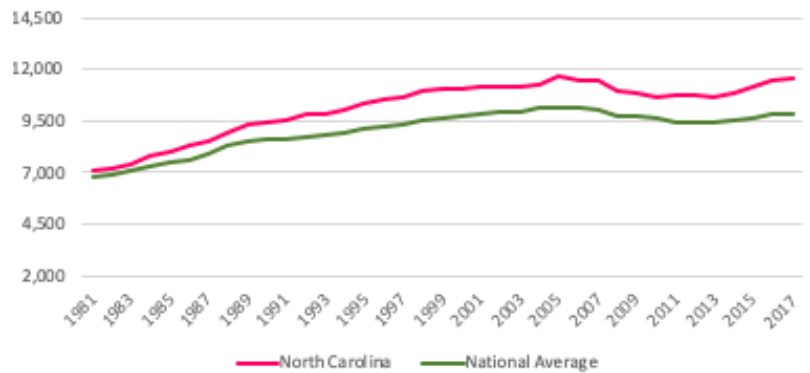


³ North Carolina Department of Transportation

Why will consumption decline?

One major shift that is affecting gasoline consumption is that people are changing their driving habits. Although gasoline consumption has gone up in recent years, that modest increase may be due mainly to population growth. More people are driving, but per capita measures of vehicle miles traveled (**Figure 2**)⁴ indicate how much each person drives is leveling off or even declining. While studies disagree on the impacts of ridesharing services, other factors such as urbanization, increased use of public transit and technological advances are expected to continue to affect fuel consumption and related taxes.

Figure 2: Vehicle Miles Travelled per Capita



Did you know?

6.1 Billion
Gallons of Gas
Sold in FY 2019



Your annual individual
contribution supports the
patching of **one** pothole



On average, you pay

\$3.80



a week on the gas tax

North Carolina has the



highest gas tax in
the nation

⁴ Data in Figure 2 compiled by Eno Center for Transportation.
<https://www.enotrans.org/wp-content/uploads/2019/06/VMT-per-capita-by-state-1981-2017.pdf>.
Correction made to 2009 North Carolina data.

Why will consumption decline? *(continued)*

Beyond changing mobility preferences, improved fuel economy and an increase in alternative fuel vehicles are also expected to affect fuel consumption. As shown in **Figure 3**,⁵ the fuel economy of North Carolina vehicles is rising steadily, up 2.2 miles per gallon over the last 10 years. Although North Carolina now has just a small share of the 1.27 million electric vehicles operating in the United States,⁶ in-state sales of these vehicles grew 69 percent over the last fiscal year and sales of hybrid vehicles grew 4.4 percent.

Analysts predict that sales of electric and hybrid vehicles will quickly increase as charging infrastructure expands and battery costs decrease. The Edison Electric Institute, for example, estimates that electric vehicle sales will surpass 18.7 million nationwide by 2030. Owners of electric and hybrid vehicles in North Carolina pay less in gas taxes and registration fees compared to owners of gasoline-powered vehicles (**Figure 4**).⁷ An owner of an electric vehicle invests \$53 less per year in the state's infrastructure than the average driver. This shortfall will add up as the use of these vehicles continues growing.

Figure 3: Factors Influencing Fuel Consumption

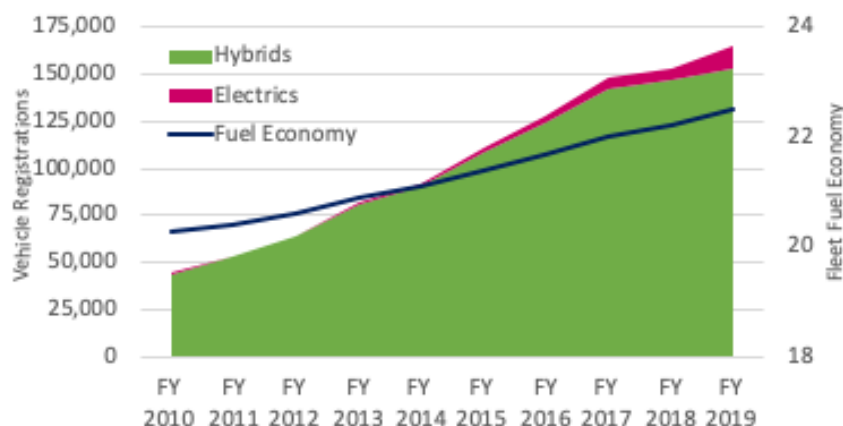
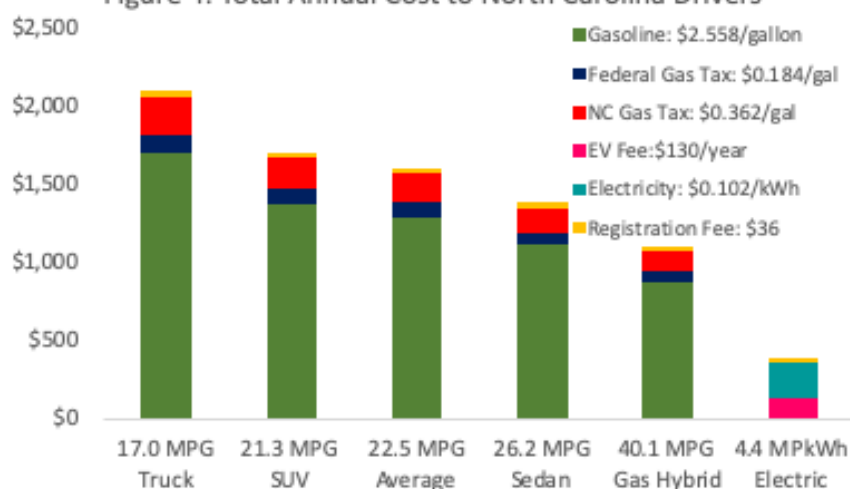


Figure 4: Total Annual Cost to North Carolina Drivers



Summary

Although a recovering economy and a growing population have provided modest growth in motor fuel consumption in recent years, the increase is not sustainable. As more drivers alter their mobility patterns that reduce miles traveled and shift to more fuel-efficient and alternative fuel vehicles, motor fuel tax revenues will decline. As a result, new or better revenue sources will be necessary to offset those losses and ensure that North Carolina can meet its future transportation investment needs.

⁵ North Carolina Department of Transportation

⁶ Edison Electric Institute. Figure represents electric vehicle sales in the United States through June 30, 2019.

⁷ North Carolina Department of Transportation